



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,057	12/31/2001	Han-Su Yee	053785-5046	5635
9629	7590	01/04/2005	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			WARREN, MATTHEW E	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/032,057	Applicant(s) YEE ET AL.	
	Examiner Matthew E Warren	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-10 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the After Amendment filed on December 7, 2004.

Response to Request for Reconsideration

Applicant's arguments filed in the After Final Amendment, with respect to the rejection(s) of claim(s) 1-7 anticipated by Shin have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, the rejection of claims 1 and 8-10 anticipated by Wook will remain and a new rejection applied to dependent claims 2-7 must be additionally made.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Wook (US 5,894,136).

In re claim 1, Wook shows (figs. 3-4E) an array substrate for a liquid crystal display device, comprising: a gate line (4), a data line including a first data line (8) having a first width and a second data (9) line having a second width overlying the first data line, the second width is larger than the first width. A pixel electrode (11) is formed in a pixel region and defined by a crossing of the gate line and the data line. A thin film

Art Unit: 2815

transistor is connected to the pixel electrode (col. 1, lines 47-57). In re the limitations of the claim concerning the pixel electrode being formed during a same process as the second data line, a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, **190 USPQ 15 at 17**(footnote 3). See also in re Brown, **173 USPQ 685**; In re Luck, **177 USPQ 523**; In re Fessmann, **180 USPQ 324**; In re Avery, **186 USPQ 116** in re Wertheim, **191 USPQ 90** (**209 USPQ 254** does not deal with this issue); and In re Marosi et al, **218 USPQ 289** final product per se which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "product by process" claims or not. Note that Applicant has the burden of proof in such cases, as the above case law makes clear. "Even though product-by- process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted).

In re claims 8 - 10, Wook discloses (col. 1, lines 47-56) that the thin film transistor includes the gate electrode, a first source electrode has a first width connected to the first data line, a second source electrode has a second width connected to the second data line because the source electrode is integrally formed with the data line (col. 2, lines 18-19). A drain electrode is spaced apart from the first source electrode. The second source electrode is formed over the first source electrode

Art Unit: 2815

and second width of the second source electrode is larger than the first width of the first source electrode.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wook (US 5,894,136) as applied to claim 1 above, and further in view of Shin (US 5,828,433).

In re claims 2 and 3, Wook shows all of the elements of the claims except the passivation layer between the first and second data line. Shin shows (fig. 2d) a passivating layer (9) between the source pad (7A) and the ITO pattern (6A), and at least one data contact hole (col. 4, lines 6-15) in each pixel region for connecting the first source pad and the ITO pattern. Although Shin does not specifically disclose a first and second data line, the components of Shin can be applied to the first and second data lines of Wook because Shin discloses (1) that in the well known prior art devices, source electrodes conduct a data signal (col. 1, line 67-col. 2, line 4), that (2) ITO pattern (6A) is provided on the source pad 2A which is part of the data electrode of the LCD (col. 4, lines 23-24), and that (3) Wook discloses (col. 2, lines 9-19) that the data line and source electrode are integrally formed. Therefore, it would have been obvious

Art Unit: 2815

to one of ordinary skill in the art at the time the invention was made to modify the first and second data lines of Wook by forming a passivation layer between them and a contact hole to connect the first and second data lines as taught by Shin to isolate the layers and prevent shorts.

In re claims 5-7, Wook shows all of the elements of the claims except the first and second data lines being made of the desired metals and ITO. Shin discloses (col. 13, lines 63-67) that the first data line is made of a conductive layer which broadly includes at least one of molybdenum (Mo), tungsten (W), chromium (Cr), and nickel (Ni). In re claim 6 and 7, Shin discloses (col. 4, lines 16-26) that the ITO layer (6A) and the pixel electrode include at least a transparent conductive material, wherein the transparent conductive material includes at least indium tin oxide (ITO). With such a configuration, high contact resistance between the source pad and source can be avoided (col. 4, lines 35-46), and the process allows for less processing steps, ultimately reducing the manufacturing costs (col. 5, lines 40-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first and second data lines of Wook by using conductors and ITO as taught by Shin to avoid high contact resistance between the lines and reduce manufacturing costs.

Response to Arguments

Applicant's arguments with respect to claims 2-7 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2815

Applicant's arguments filed with respect to rejection of claims 1 and 8-10, anticipated by Wook, have been fully considered but they are not persuasive. The applicant primarily asserts that Wook does not disclose the first and second data line. Wook explicitly discloses (col. 2, lines 9-20) that "a chrome layer 9 is deposited on the overall surface of the substrate, and then selectively removed except on the high concentration n-type amorphous silicon layer 8 of the data line region ... to form the data line and source/drain electrode of the TFT." In fig. 4c, Wook explicitly shows that layers 7 and 8 are formed in the "data line forming area." In subsequent figure 4d, Wook explicitly shows that chrome layer 9 is formed over layers 7 and 8 in the data line forming area and has a larger width. Furthermore, figure 3 shows in an overhead view that layer 9 is formed in a line and that portions of layer 7 are also formed in a line and overlapped by layer 9. Therefore, the layers 7, 8, and 9 constitute a data line and the rejection is proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E Warren whose telephone number is (571) 272-1737. The examiner can normally be reached on Mon-Thur and alternating Fri 9:00-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2815

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MEW

MEW

December 27, 2004

Tom Thomas

FOR THOMAS
SUPERVISOR
(11111111111111111111)